Lipschutz, Alexander. *The Internal Secretions of the Sex Glands.* Heffers. Cambridge. 1924. Pp. 513. 21s. net.

Champy, Ch. *Sexualitz et Hormones.* Dion, Paris, 1924. Pp. 371. 30 fr. nett.

THESE two books deal with what is essentially the same problem, and may fittingly, therefore, form the subject of a joint review. The first, by Lipschütz, is a revised translation of the author's *Die Pubertatsdrüse und ihre Wirkungen* published at Berne in 1919, and deals mainly with sexual differentiation in mammals. Champy, who is best known for his work on sex reversal in *Triton alpestris* and other amphibians, is concerned mostly, though not exclusively, with the lower animals. Lipschütz first turns attention to the results of castration and ovariotomy, and from this basis proceeds to discuss the evidence pointing to endocrine function on the part of the gonads, together with the results of transplantation. Having established the facts of internal secretion by the gonads, the author considers the seat of the production of the secretions. In conformity with most recent opinion it is concluded that the interstitial cells are a necessary part of the endocrine apparatus and the testicle, and that no proof exists of a direct hormonic action by any constituent of the seminiferous tubules independently of the interstitial cells. In this connection it may be mentioned that the author postulates two main periods of endocrine activity on the part of the testis, firstly during embryonic life when sex differentiation is begun, and secondly, when it is completed at puberty. It is clear, however, that, since castration, even after puberty, leads to retrogression, there must be some continued activity. The seat of the internal secretion of the ovary, which is next considered, is a more complicated question on account of the fact that recent work appears to have demonstrated three ovarian hormones; one connected with sex differentiation and produced as in the testis by the interstitial tissue; a second governing the uterine cycle and produced by the follicles; and a third, connected with lactation and possibly implantation, secreted by the corpora lutea. Since the follicles and corpora are essentially cyclic structures the problem is obviously one of considerable difficulty. After a short discussion of the specific action of the sex hormones, including an account of masculinisation and feminisation, Lipschütz passes on to consider the question of the isolation of the sex hormones, one of the most fascinating of modern researches, and one which will no doubt be greatly stimulated by the recent successful preparation of insulin. Lipschütz pays some attention to the feeding of entire organs and extracts, but it may be emphasised here that the destructive action of the digestive engymes in all probability renders futile such experiments. Thyroxin alone of the better known hormones will withstand digestion in the intestines, and this is probably accounted for by the fact that originally the thyroid gland secretion was poured straight into the digestive tract by way of the thyroglossal duct. The most striking part of the remainder of the book is Lipschütz's theory of the sexuality of the embryonic soma. This hypothesis is in opposition to a vast body of cytological work, and appears to leave untouched the problem of what stimulates the differentiation of the gonads themselves. It is generally admitted, of course, that the

chromosome constitution may be overridden, or in mammals partially overridden, by the subsequent production of sex hormones of a different type, but there seems little doubt that in the ordinary way sex follows the chromosome constitution, which is inherent to the whole organism.

Champy treats first of the morphological development of the gonads, and then of the development of the secondary sexual characters. The next section of the book is devoted to the effects of castration, and to the evidence of internal secretion by the gonads, special notice being taken of lower animals. In addition there is a detailed discussion of the inter-relation of the thyroid gland with the phenomena of growth and reproduction. The book is concluded by a chapter on the origin of the internal secretions of the gonads.

Both volumes are in the nature of compilations, and each from a different point of view presents the subject in an acceptable form. Both are profusely illustrated, and *The Internal Secretions of the Sex Glands* is noteworthy for an excellent bibliography and will save much labour for those desirous of making a close acquaintance with this branch of physiology.

A. S. PARKES.

MacBride, E. W., M.A., D.Sc., LL.D., F.R.S., Professor of Zoology in the Imperial College of Science and Technology, London. *An Introduction to the Study of Heredity.* Illustrated. Williams and Norgate. London. 1924. Pp. 256.

THE vast importance of Heredity is only beginning to be appreciated. Evolution is founded on it, the mental and bodily equipment of the individual is determined by it, the fate of nations depends on it. It is, therefore, only right that every educated man and woman should obtain some knowledge of the main principles of the science of heredity and the evidence on which they are based. Prof. MacBride in this little book has given an admirably clear account, adequately illustrated by diagrammatic figures, of only some of the elements of the subject. The author has strong opinions and expresses them with characteristic courage and vigour. The book is full of information conveyed in very readable form; but it is by no means free from serious defects. Shrewd hits are dealt at the 'Mendelians'; it must be admitted, however, that the current 'factorial'' interpretation of heredity and of variation accounts for a vast number of observed facts for which no better explanation can be given. On the other hand, Prof. MacBride seems to place undue confidence in certain observations and experiments of Kammerer, Pavlov, Tornier and others, which are supposed to support the theory of Lamarck, and is indignant because the majority of biologists are more cautious and sceptical. One of the reasons why most serious students of heredity refuse to accept the Lamarckian interpretation is that over and over again similar claims have been made by authors whose observations have always in the end been shown to be either erroneous or capable of a better explanation. We think it most unfortunate that in a book of this kind, designed for the general reader, so much space should be devoted to the discussion of results which have not been fully confirmed and are not generally accepted. While such a prominent place is given to doubtful evidence